Elizabeth River
Restoration and Conservation

A Watershed Action Plan

Revised Second Edition

THE Elizabeth River Project

Elizabeth River Restoration and Conservation

A Watershed Action Plan
Executive Summary

Leaders pledging support for key goals of this plan during 2001 - 2002:

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US Environmental Protection Agency
Donald S. Welsh, Region III Administrator,
US Environmental Protection Agency
Rear Admiral David Architzel, Commander,
US Navy Region Mid-Atlantic
Colonel David L. Hansen, District Engineer,
US Army Corps of Engineers, Norfolk District
M. "Nuns" Jain, Region Director,
US Department of Transportation,
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Virginia Lieutenant Governor ***John H. Hagar***
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Alan E. Gollihue, Executive Director,
Portsmouth General Hospital Foundation
Pete Graham, Site Leader, Nova Chemicals (USA), Inc.
Mike Hom, Plant Manager,
Ford Motor Company Norfolk Assembly Plant
Kay Kemper, President, Rotary Club of Norfolk

First Edition prepared by the Elizabeth River Project's Watershed Action Team in partnership with Commonwealth of Virginia.
Also funded by US Environmental Protection Agency, Virginia Environmental Endowment,
Virginia Department of Environmental Quality's Coastal Resources Management Program.
Revised Second Edition made possible by a Stakeholder Review Team and
funding from the Virginia Department of Environmental Quality and the Chesapeake Bay Program.
In-kind support, US Army Corps of Engineers, Norfolk District.
Illustrations courtesy exhibiting artists, the Living River 2002, Hermitage Foundation Museum and Elizabeth River Project.
Cover art *copyright Ronn Maratea for the Living River exhibit 2002.*

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First Edition, June 20, 1996
Revised Second Edition,
September 8, 2002
Printed on recycled paper with environmentally-friendly ink

"If you're looking for an example of the success of partnerships, Elizabeth River Project is the model."

- Christine Todd Whitman, Administrator, US Environmental Protection Agency.

Whitman brings her support to Paradise Creek on the Elizabeth, July 29, 2002. L-R: Whitman; US Senator John Warner; Marjorie Mayfield, Executive Director, Elizabeth River Project; and Don Welsh, EPA Region III Administrator.

Guiding Principles for Implementing this Plan

- Build strong partnerships through a collaborative approach.
- Sustain the balance of a healthy economy and a healthy ecology.
- Raise awareness and appreciation for the Elizabeth River and its tributaries.
- Safeguard human health.
- Promote environmental justice for all stakeholders.
- Enhance compliance with existing regulations.
- Strengthen the Elizabeth River Project as the organization coordinating community-wide implementation of the plan.

Introduction: The Power of Partnerships

Welcome to one of the great river restorations of our time.

The non-profit Elizabeth River Project is pleased to present a Revised Second Edition of our 1996 Watershed Action Plan, reflecting lessons learned during six years of surprising success. Initial implementation results have made the restoration of the Elizabeth River a model for many others seeking a new way of solving environmental challenges: through the power of partnerships.

"If you're looking for an example of the success of partnerships, The Elizabeth River Project is the model," said Administrator Christine Todd Whitman, US Environmental Protection Agency. She visited the Elizabeth River Project July 29, 2002 to present a $100,000 check for the restoration of Paradise Creek as a model for the Chesapeake Bay.

The Elizabeth River is the most polluted tributary on the bay for certain carcinogens. After four centuries as a world center of maritime commerce and naval power, few rivers are more intensely industrialized, and few are more important to American security and economic vitality than the Elizabeth in Southeastern Virginia. Millions in voluntary environmental improvements are now underway by all major sectors of this great harbor -- interests that, until six years ago, seemed hopelessly opposed to working together.

Until the Elizabeth River Project introduced the first edition of this plan, much of our community thought our home river was dead. Now all four river cities, the state and the federal government are funding a $13 million project developed by the US Army Corps of Engineers to clean the first site on the toxic river bottom and restore eight wetlands.

Some of Virginia's largest corporations are "River Star" facilities documenting voluntary results in pollution prevention and wildlife habitat with The Elizabeth River Project. Meanwhile, comprehensive state monitoring reflects stellar progress: the Elizabeth River showed some of the most significant improvements in water quality over the last decade of any tributary on the Chesapeake.

Thus this second edition of our plan, *Elizabeth River Restoration "and Conservation,"* with more ambitious, more specific goals. The revised plan reflects a resounding confidence in our region's ability to carry out the plan, and a deepened understanding of the challenges involved.

The Clean Fourteen

Five years into implementation, The Elizabeth River Project called 45 diverse stakeholders together (listed on back cover) to update the plan based on lessons learned and changes in circumstances. The team met throughout 2001. About 70 regional leaders (see inside cover) then endorsed key revised goals in late 2001 and early 2002.

Key changes include:

- **The old 18 actions are streamlined into a succinct "Clean 14."** Some old actions are combined or updated to reflect changing circumstances. Two new actions are added: Action 8, giving priority to educating students and the public, and Action 9, recognizing litter as the average citizen's most tangible concern.
- **The mummichog minnow,** exhibiting high rates of liver cancer in the Southern Branch of the Elizabeth, is selected as the indicator species for tracking progress with cleaning the river sediments.
- **A strong new focus is placed on conservation** of existing natural areas (preventive health care), now side by side with the previous singular focus on restoration.
- **The revised plan identifies specific geographic areas** that will benefit the most from restoration and conservation. These areas are the target of ambitious goals for 10 miles of improved "river corridors" with sections in all four river cities by 2020.
- **Reuse rather than disposal** is the new top priority for addressing stormwater, the No. 1 source of new pollution in the Elizabeth.
- **Revisions make the plan compatible** with the Chesapeake 2000 Agreement, Toxics 2000 Strategy, Chesapeake Bay Program.

Initial plan: an historic consensus

Scientists, regulators, business leaders, environmental activists, civic leaders, watermen and more served on a 120-member Watershed Action Team of the Elizabeth River Project which reached consensus on the initial action plan in 1996. The plan culminated nearly four years of research and debate across diverse interests regarding how to clean up Virginia's most notorious and perhaps most economically important river. Guided by a "comparative risk" planning model of the EPA's Office of Policy, Planning and Evaluation, the team was committed to selecting only actions that met these tests: effective, affordable and acceptable to the community.

When the final plan was introduced at a public conference June 20, 1996, euphoria swept the community. Banner headlines and 11 news articles appeared in the local press in one week. The late Charles Kuralt of CBS, keynote speaker at the debut, reflected on the arduous research and the spectrum of support: "You have the knowledge that has been so hard won. You have the resources and the people, and I am convinced, too, the will to give the river a rebirth."

Award-winning implementation progress

The original plan was adopted by the Commonwealth as its Regional Action Plan for reducing toxics in a Region of Concern for the Chesapeake Bay. Broad implementation began immediately.

- The US Army Corps of Engineers, Norfolk District, won Outstanding Planning Achievement in the nation in 2001 for a $2.3 million feasibility investigation of how to clean the Elizabeth's toxic sediments. The Corps began the project in 1996, in response to Action 1, *Elizabeth River Restoration*. To build public understanding, the Elizabeth River Project launched the area's first public instruction on bottom-life ecology, with in-service training for middle school teachers; evening workshops for adults; and visits with the historic character, Princess Elizabeth, for elementary schools. Cost-shared by Chesapeake, Norfolk, Portsmouth, Virginia Beach, the Commonwealth of Virginia and Congress, the first cleanup, at Scuffletown Creek, Chesapeake, is set for 2003-04 along with the sweeping restoration of more than 20 acres of wetlands across four cities.

River Star facilities restored or conserved 300 acres of scarce natural habitat in the urban watershed by 2002.

- River Star facilities restored or conserved 300 acres of scarce natural habitat in the urban watershed by 2002. Pollution prevention success included the shipyard NORSHIPCO's reducing suspended solids in its runoff 86 percent through $2.5 million in site improvements. Southern States Chesapeake fertilizer plant pioneered re-use of

Introduction

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a ton of stormwater a year. Ford Motor Co. adopted "green" purchasing and the Norfolk Navy base cut chemical emissions 85 percent.

- The Elizabeth River Project and the City of Norfolk won the international Clearwater Award in 1997 for Birdsong Wetland. The success inspired the restoration of Pescara Creek Wetland with Norfolk in 1999 and the creation of Oscar's Landing Wetland with Chesapeake in 2002. Virginia Beach set aside $50 million for land acquisition and conservation and began a scenic greenway on the Eastern Branch.
- Stormwater education received a longterm boost when cities and counties of the Hampton Roads Planning District helped the Elizabeth River Project establish a permanent exhibit on the topic at Nauticus, the National Maritime Center. The Project also hired Bill Hunt of North Carolina State University to assess 30 sites for runoff improvements. Implementation is underway.
- More than 40 abandoned vessels were cleared from the river with state funding and cooperating public and private agencies. Removed were all but one of the vessels posing the highest threat to navigation.
- The Virginia Department of Environmental Quality launched the most comprehensive monitoring of any river in the state's history. The first full report on the new data, published in 2000, showed the bottom of the river still harboring some of the most serious contamination found anywhere. However, trends for water quality are improving significantly relative to other areas in the Chesapeake Bay for conventional indicators such as nitrogen and dissolved oxygen. The Elizabeth River Project begins citizen monitoring in 2002-03.

When we'll know that we're done

Four citizens around a kitchen table hatched the Elizabeth River Project in 1991. By 2002, the Elizabeth River Project counted 2,000 members and hundreds of partner organizations and volunteers, all supporting the mission "to restore the environmental quality of the Elizabeth River to the highest practical level of environmental quality through government, citizen and business partnerships."

The fundamental challenge remains the same: to keep the momentum going. Join us -- for one of the great river restorations of our time.

"When the wetlands really come back," Kuralt said, unveiling the plan; *"when the forests return to the shore, when healthy fish and clams and oysters find a home in the Southern reaches of the river again, and the sun rises off the Atlantic in the morning to reflect itself in the serene, pure waters of the Elizabeth River, our children and grandchildren will know that we had them in mind."*

The Clean Fourteen

Highest Priority Actions Page

Other Priority Actions

The Clean Fourteen

Highest Priority Actions

Action 1

Sediment Clean Up

The goo must go! Clean up Elizabeth River sediments.

2020 goal: Make the "mummichog" well again, as a symbol for reducing contamination in the sediment to non-toxic levels in priority areas.

2007 goal: Restore the first contaminated sediment site.

Challenge:

The contamination in the river sediment is the most serious challenge on the river, correlated with cancer and deformity in fish and risks to human health. The bottom of the river is identified as the most toxic location on the Chesapeake Bay.

Solution:

Reduce sediment contamination in the Elizabeth River to levels non-toxic to humans and aquatic life.

Action steps:

1) Ensure success of the first major clean-up of contaminated river sediments in the country to be initiated by the voluntary desire of a community for improved quality of life. This award-winning plan by the US Army Corps of Engineers, Norfolk District, is scheduled to begin implementation at Scuffletown Creek, Chesapeake, in '03 - '04 to demonstrate how to succeed with other hot spots on the Elizabeth River. Pursue cost-effective remediation of additional hotspots through partnerships including US EPA.

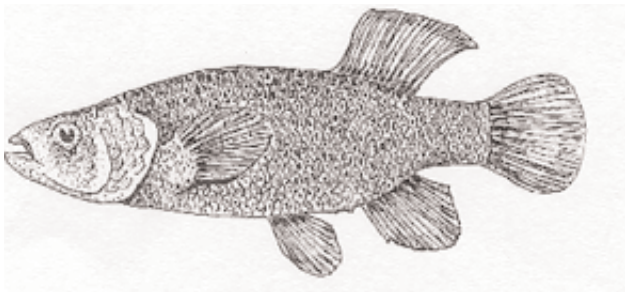
2) Continue "Goo must go!" campaign of the Elizabeth River Project to raise public understanding and support for sediment remediation.

3) Elizabeth River Project's Monitoring Advisory Committee shall recommend a standard for declaring the mummichog minnow "well again."

4) Throw "Mummichog Tog" dances with scientific reports at regular intervals on how the minnow is doing. In 2020, hold the final dance to celebrate the return to health of this cancer-riddled bottom-dweller.

The fascinating world at the bottom of the Elizabeth

The bottom of the river is called the “benthos,” from the Greek for “depths of the sea.” Benthic organisms, from microbes to fish, are those living in, on, or near the bottom of the water. **About 16 percent of all living animal species are benthic!**



The mummichog minnow exhibits high rates of liver cancer or precancerous lesions in hotspots of the Elizabeth. This fish has been selected as an indicator species - the “canary” - for tracking improvements in the health of the river bottom. Silvery gray to dark olive, 4-6 inches, the fish is food for striped bass, trout, and herons.

Copyright Bob Holland for Living River exhibit 2002

Restore and conserve vegetated buffers, wetlands and forests.

Action 2

Wetlands, Forests

2020 goal: Create 10 miles of Elizabeth River "corridors" - contiguous green shoreline - with sections in all river cities. Enlist River Star facilities along the corridors.

2007 goals: Restore/conserve Paradise Creek as a model corridor for the Southern Branch. Achieve a major wetland restoration with each river city.

Challenge:

The Elizabeth River has lost 50 percent of its tidal wetlands since World War II. Habitat loss is severe, with shorelines hardened for as much as six miles at a stretch.

Solution:

Restore and conserve vegetated buffers, wetlands, forested areas and other wildlife habitat. Minimize erosion and encourage sustainable landscaping. Adopt a strong focus on conservation of existing natural resources.

Action Steps:

1) Restore and conserve Paradise Creek in Portsmouth as a model for the Southern Branch. This five-year plan and some projects are underway with $150,000 in grants to Elizabeth River Project. Majority of creek interests are participating.

2) Achieve corridors in priority areas: Southern Branch from Scuffletown Creek to Great Bridge. Eastern Branch from the headwaters in Virginia Beach to Poplar Hall, Norfolk (exemplary greenway underway, City of Virginia Beach). Main Stem from Atlantic City to Lamberts Point, Norfolk (underway is Elizabeth River Trail, City of Norfolk). Enlist River Stars along the corridors. Develop a plan to extend corridors into other tributaries.

3) Promote wildlife habitat creation through Elizabeth River Project's *Wildlife Habitat Guide* and Chesapeake Bay Foundation's oyster gardening initiatives. The foundation and partners have created four oyster reefs in the Elizabeth River system.

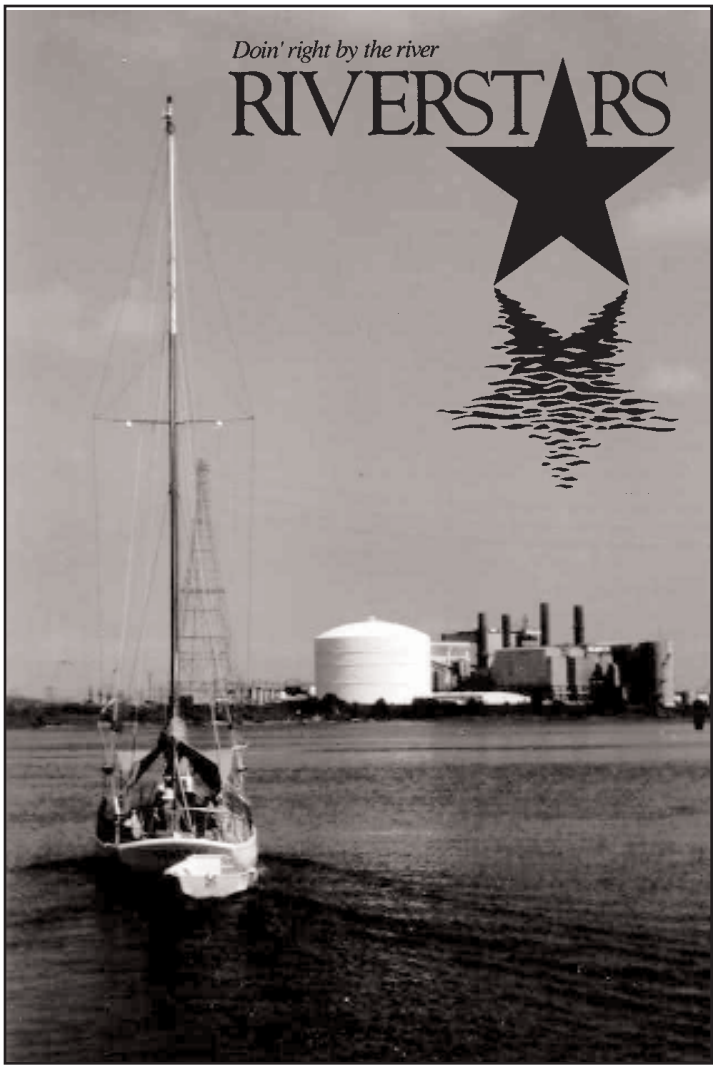
4) Promote conservation options ranging from non-binding "understandings" to land trusts to conservation easements.

5) Promote public access through waterways and bike trails.

6) "De-polarize" dredging of shallow tributaries by dialogue with diverse interests.

Action 3
Pollution Prevention

Engage River Star industrial partners to establish pollution prevention as the industrial ethic for the Elizabeth River watershed.



2020 goal: Create at least 10 miles of shoreline with industrial facilities adopting voluntary pollution prevention as River Stars. The mileage should include sections in all river cities.

2007 goal: Double the number of "Model Level" River Stars, those recognized as exemplary leaders in environmental stewardship.

Challenge:

Elizabeth River industries made great strides in recent decades to reduce pollution in response to regulatory requirements, but significant opportunities remain for reducing toxics beyond the efforts required by law, and beyond the traditional waste treatment approach. Incentives and assistance are needed to inspire voluntary action that halts pollution at the source -- pollution prevention -- rather than cleaning up after the fact.

Solution:

Establish voluntary pollution prevention as the industrial ethic for the Elizabeth River watershed through the assistance and public recognition provided by the River Stars program of the Elizabeth River Project, in partnership with other agencies. Pollution prevention offers a "win-win" path to save money, enhance safety and reduce liability. Meet objectives of Chesapeake 2000 Agreement for a Region of Concern (Toxics 2000 Strategy), including: "Through continual improvement of pollution prevention measures and other voluntary means, strive for zero release of chemical contaminants from point and non-point sources."

Action steps:

1) Continue the success of the River Stars program to help facilities achieve voluntary pollution prevention and wildlife habitat.

2) Heighten the community profile of the River Stars program through intensive marketing efforts.

3) Recruit River Star participation in priority areas as identified by a 2001 master plan of the Elizabeth River Project.

4) Mobilize expert volunteers and peers to assist the River Star program.

5) Provide effective peer review to recognize achievements of participants.

6) Promote a web-based "waste exchange" developed by a local consortium in cooperation with Old Dominion University. The site allows industries to make available their excess materials that may have value to others (http://hrxme.cee.odu.edu).

7) Pursue a goal of achieving self-sustaining funding for the River Stars program.

Wet weather: Reduce toxics and nutrients in stormwater runoff.

Action 4

Stormwater Reuse

2020 goal: Maximize the capture and reuse of stormwater as a resource.

2007 goal: Implement an innovative strategy in a downtown area as a demonstration for solving urban runoff challenges.

Challenge:

As much as 90 percent of new pollution entering the Elizabeth River today arrives in runoff from parking lots, lawns, and other industrial and residential surfaces. An aging system of stormwater drains rushes a potentially toxic soup of soils, fertilizers, pesticides and metals directly into the river. The world faces growing water shortages while throwing away this fresh water.

Solution:

Reduce pollution from stormwater runoff to the maximum practical extent, while promoting reuse of stormwater as a resource. Meet objectives of Chesapeake 2000 Agreement for a Region of Concern (Toxics 2000 Strategy), including: " ... by 2010, reduce nonpoint sources of contamination by at least 30 percent."

Action steps:

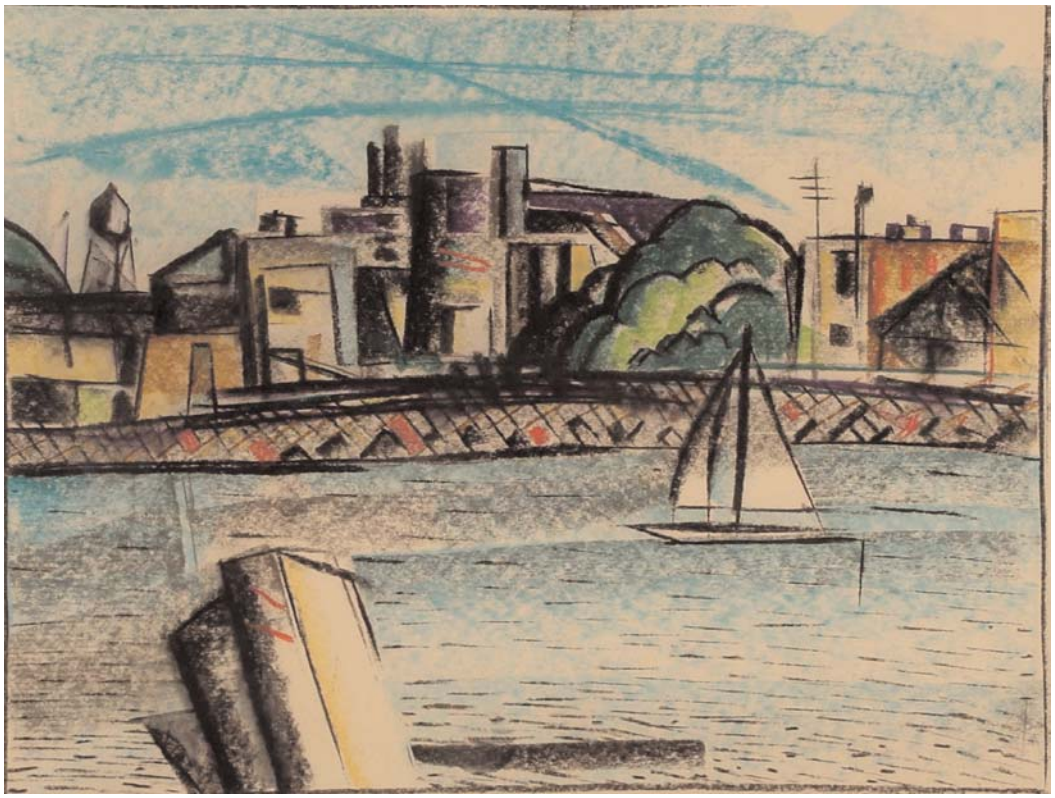
1) Promote beneficial reuse of stormwater in cooperation with Hampton Roads Planning District Commission, area municipalities, the construction industry and River Star industries. Promote voluntary strategies such as roof gardens, rain gardens and cistern systems to recapture rain for irrigation.

2) Implement an innovative plan for improving runoff control in a downtown area.

3) Implement demonstration projects for reducing stormwater impacts, such as those designed by William Hunt, North Carolina State University, for Elizabeth River Project.

4) Complement public education by regional cities about runoff.

5) Increase public support for city stormwater pollution reduction programs and the active use of city resources to implement pollution management.



Action 5

Monitoring Trends

Monitor river trends to guide effective restoration and conservation.

2020 goal: Determine 20-year trends for water quality, sediment quality and living resources and report them to the public linking trends to restoration activities.

2007 goal: Expand the monitoring program to include wet weather and broader use of key indicator species to monitor trends.

Challenge:

Without a consistent way to measure river condition over time, the community will be unable to judge whether management efforts are effective.

Monitoring Stations on the Elizabeth River

To guide this plan, the Virginia Department of Environmental Quality tracks trends in water quality, sediment quality and living resources throughout the river system.

Solution:

Collect data to determine trends and provide the scientific foundation for protecting, restoring and sustaining living resources in the Elizabeth River watershed.

Action Steps:

1) The Virginia Department of Environmental Quality should continue comprehensive monitoring of river trends through the Elizabeth River Monitoring Program, addressing water quality, sediment quality and fish health, as well as monitoring fish tissue to determine risks to human health, connecting monitoring results and restoration goals where possible.

- Develop a strategy to monitor wet weather events.
- Monitor the mummichog minnow's condition as a key indicator of bottom health.

2) The Elizabeth River Project should continue to facilitate the Monitoring Advisory Committee organizing community scientists to review and interpret data for the public.

3) Publish annual summaries of monitoring accomplishments and comprehensive State of the River reports when sufficient new data has accumulated to indicate major changes in trends. *(Baseline data was presented in the State of the River Report 2000.)*

4) Begin citizen monitoring in 2002-03 to involve the community in a better understanding of water quality, in cooperation with others, including Alliance for the Chesapeake Bay and the Commonwealth of Virginia.

5) Continue to make data and reader-friendly interpretations readily available at the Elizabeth River Project website, **www.elizabethriver.org**, and ensure the establishment of an accessible data bank of river information.

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Action 6

Cleaning Uplands

Restore contaminated uplands where the payoff is high for enhancing marketability as well as enhancing the environment.

2020 goal: Restore the highest priority contaminated uplands, or those with the highest potential to recontaminate restored sediments.

2007 goal: Achieve a successful demonstration upland cleanup.

Challenge:

The shoreline of the Elizabeth River is blotched with industrial sites abandoned because of contamination. Not only do these "brownfields" sites pose threats to the economy and environment. They also halt cleanup of the river bottom (Action 1) because of concern for recontamination.

Solution:

Restore contaminated uplands where the payoff is high for enhancing economic marketability and enhancing the environment. Give priority to uplands that could become prime real estate. Pursue Chesapeake 2000 Agreement for Sound Land Use: "Strengthen brownfields redevelopment. By 2010 rehabilitate and restore 1,050 brownfields sites to productive use."

Action Steps:

1) Explore federal and state resources for redevelopment of "brownfields," idle industrial sites where real or perceived contamination is preventing beneficial use. Explore partnerships with area cities to pursue EPA funding including a million-dollar revolving loan fund for brownfields cleanup and pilot grants to assess potential sites and conduct community outreach.

2) Give priority to expeditious cleanup of the former Eppinger and Russel creosote plant in Chesapeake.

3) Consider easements, capping, greening.

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Action 7
Responsible Port Growth

Ensure that a proposed expansion of Craney Island, and other proposed port expansions, are both ecologically and economically responsible.

2020 goal: Ensure that expansion of Craney Island, and other proposed port expansions, are *both* ecologically *and* economically responsible.

2007 goal: Negotiate win-win projects that can be expected to result in a net gain for the river, rather than a net loss.

Challenge:

The Virginia Port Authority and the US Army Corps of Engineers propose a $1.6 billion expansion of the Craney Island Dredged Material Management Facility. One leading alternative involves an eastward expansion, filling in as much as 600 acres at the mouth of the Elizabeth River. This represents a potential loss of river area equivalent in size to losing about a third of the Lafayette River. Construction of other major private port facilities are proposed as well.

Solution:

Ensure that any major expansions of port-related facilities safeguard both the ecology and the economy.

Action Steps:

1) Continue Elizabeth River Project's collaborative efforts to find a solution to the Craney Island expansion that meets the needs of all major interests, including the need to complement river restoration efforts. Ensure that plans will result in a net environmental gain for the Elizabeth River, rather than a net loss. Initial requests by Elizabeth River Project were honored, such as facilitated stakeholder meetings to "think out of the box" on solutions, and a Virginia Institute of Marine Science hydrodynamic computer model to predict impacts on the river's flushing ability.

2) Work with other proposed port expansion planners to develop win-win plans.

Action 8
Education, Appreciation

Educate schoolchildren and the public on river ecology and the Elizabeth River's key challenges.

2020 goal: Reach all age levels with bottom-life ecology and sustainable landscaping education. Raise river appreciation through events engaging the arts. Develop a river curriculum. Recruit action-oriented River Star Schools in the river corridors (see Action 2).

2007 goal: Double the number of "Model Level" River Star Schools, with at least one model school in each river city; implement Hampton Roads' first comprehensive instruction on benthic ecology.

Challenge:

When the Elizabeth River Project was founded, many in Hampton Roads ignored the Elizabeth as hopelessly polluted. Little was understood about the river's continuing functions as a living estuary, its real pollution challenges, or its economic importance. Restoration success pivots on a better job of educating coming generations.

Solution:

Develop comprehensive activities to increase public awareness of the Elizabeth and stewardship opportunities. Stimulate a "river consciousness" in students and the public to generate citizen action in pollution prevention, habitat restoration and conservation. Address objectives of Chesapeake 2000 Agreement, Education and Outreach: "Make education and outreach a priority in order to achieve public awareness and personal involvement on behalf of the Bay and local watersheds."

Action Steps:

1) Continue Elizabeth River Project's "Goo must go!" education campaign for all ages in concert with the Virginia Institute of Marine Science, the public schools of Chesapeake, Norfolk, Portsmouth and Virginia Beach and scientists. The campaign includes live aquariums, teacher training, and school presentations by the historic character Princess Elizabeth, all meeting Virginia's Standards of Learning. Adults are reached through evening workshops and live displays of river life at festivals such as Harborfest.

2) Increase participation in the River Star Schools program, providing recognition for schools that document achievements in pollution prevention and wildlife habitat.

3) Inspire backyard habitats through wide distribution of the Elizabeth River Project's *Wildlife Habitat Guide*. The Garden Club of Virginia gave The Elizabeth River Project its top award for conservation in 2001 for success increasing native landscaping.

4) Double the number of "River Voices"-- speakers' bureau participants available to address citizen's groups.

5) Expand the reach of Princess Elizabeth, returned from 1619, when the river was named for her, who spellbinds all ages with her educational messages and her love for her namesake river.

6) Spread the river message through a multimedia marketing strategy, the Elizabeth River Project's website, **www.elizabethriver.org** and events such as the Living River art show, engaging mind and heart. Promote the Virginia Institute of Marine Science's web-based Environmental Atlas for the Elizabeth River.

8) Continue adult workshops and conferences for timely topics.

9) Pursue partnerships with educational organizations throughout the community.

"My goal is for us to at least clean up 1 foot of goo. I really think we can do it ... if we try hard enough!"

- letter to Princess Elizabeth from Kit, Allanton Elementary

Action 9
Reduce Litter

Reduce litter in the Elizabeth River to the maximum extent practical.

2020 goal: Establish active stewardship efforts throughout the watershed.

2007 goal: Support efforts to reduce litter in downtown waters through broad community partnerships.

Challenge:

For the average citizen, litter is the most tangible sign of neglect and lack of appreciation for the river.

Solution:

Support efforts to reduce litter in the river through broad community partnerships. Participating in litter cleanup is often the citizen's initial entry into environmental stewardship.

Action Steps:

1) Explore an Elizabeth River Project-sponsored quarterly cleanup by volunteers, in partnership with other agencies.

2) Develop a strategy to resolve litter in downtown waters resulting from downtown runoff (see Action 4, wet weather). Continue to assist the Downtown Norfolk Council, representing 1,200 downtown merchants, with its priority of cleaning up the Elizabeth River. In 18 months, the council employed private street sweepers who kept 77,000 pounds of debris out of storm drains and the river.

3) Support existing efforts of others, such as the Norfolk Environmental Commission and the Chesapeake Bay Foundation's Clean the Bay Day.

Action 10
Reduce TBT

Support local, national and international efforts to reduce levels of the toxic, TBT, in marine paint.

2007 goal: Shipyard runoff issues effectively addressed in Hampton Roads.

2020 goal: Support efforts in Hampton Roads to help achieve an international ban on TBT that is effectively enforced.

Challenge:

TBT (tributyltin) is a pesticide used in antifouling paints to protect boat hulls from barnacles and algae. TBT compounds are highly toxic to aquatic life and are capable of causing adverse effects at extremely low levels.

Solution:

Support efforts to reduce TBT in the Elizabeth River waters and sediment, while enhancing opportunities for continued competitiveness of Virginia's shipping, shipbuilding and related industries.

Action Steps:

1) Continue to support local organizations making progress such as NORSHIPCO and other shipyards which, working in partnership with area research institutions, are developing the technology to remove TBT from hull wash water.

2) Support organizations working for international solutions, including a worldwide ban and alternative coatings. The International Maritime Organization (IMO) is working toward an international ban in January 2003, giving participating countries five years to remove or encapsulate all TBT vessels, and related enforcement. The paint industry is working on alternatives to TBT in hull paint.

3) The Elizabeth River Project should continue to facilitate problem-solving with the shipyard community and regulatory and treatment agencies regarding treatment of shipyard runoff containing TBT and other contaminants. The Elizabeth River Project hosted a well-attended conference in 1998 airing the complexities of TBT.

Mitsubishi Chemical America set aside 70 acres in a 2001 Land Conservation Understanding with The Elizabeth River Project, and Southern States Chesapeake Fertilizer Plant, 15.9 acres.

Action 11
Mass Transit

Promote mass transit and alternate transportation based on recognition of automotive usage as a major source of pollution in the river.

2007 goal: Support light rail and encourage development of a strategy to increase biking.

2020 goal: Foster effective alternatives to automobile use in Hampton Roads, including large-scale mass transit and a network of bicycle paths.

Challenge:

Cars and trucks are a major source of pollution in the Elizabeth River through air emissions and through metals and oils washed off the pavement by the rain.

Solution:

Promote mass transit and alternate transportation.

Action Steps:

1) Continue to promote light rail and other innovative mass transit and alternate transportation projects proposed for Hampton Roads. Encourage the regional transportation authority to continue its significant strides, which now include free electric trams downtown in Norfolk and a natural gas powered ferry, believed the first in the nation. Continue Elizabeth River Project's education and research efforts, such as the Stormwater exhibit at Nauticus, teaching that cars are a major source of non-point pollution.

2) A popular biking path, the Elizabeth River Trail, has been developed by the City of Norfolk with a federal grant endorsed by the Elizabeth River Project. Promote extension of the trail, pursuing alternative paving, sustainable landscaping, and other improvements.

Action 12

Remove Derelicts

Remove abandoned vessels and pilings.

2007 goal: Achieve zero hazardous abandoned vessels.

2020 goal: Maintain zero hazardous abandoned vessels.

Challenge:

Abandoned vessels are unsightly, contribute to negative attitudes about the river, can leak pollution, and may pose hazards to navigation. A 1996 survey by Virginia Marine Resources Commission identified 145 abandoned vessels and 6,000 pilings and other derelict structures in the Elizabeth River.

Solution:

Continue to seek funding and provide coordination for removing hazardous abandoned vessels. The most progress of any Action can be reported for this issue during initial implementation of this plan. More than 40 vessels were removed through increased enforcement and contracted salvage work.

Action Steps:

1) Seek state reinstatement of funding for a Virginia Marine Resources Commission program which operated 1996 to 2001 to remove abandoned vessels from the Elizabeth River. Priorities were established and community participation coordinated by a Derelict Vessel Committee of the Elizabeth River Project. Participants included Chesapeake, Norfolk, Portsmouth, the Southeastern Public Service Authority, and many regional, federal and private organizations. Successes included removal of the 180-foot *Parris Island* from the Eastern Branch and removal of the "high-rise barge," a 150-foot abandoned vessel that was a notorious eyesore next to the I-64 bridge in Chesapeake. The committee helped revise state law to allow cities to assess a $25,000 per day civil penalty against owners who abandon craft. The Southeastern Public Service Authority began a program to waive disposal fees for small privately owned derelict vessels.

2) Give top priority to removal of the submerged remains of the *Onondaga*, a 205-foot steel-hull cutter posing a hazard to recreational boating just outside the main channel of the Intercoastal Waterway in Chesapeake: Invisible from the surface, she is a special hazard to water skiers.

Action 13

Load Allocation

Support efforts to implement a "load allocation approach," defining maximum total levels of pollutants the Elizabeth River ecosystem can tolerate, and allocating portions of the total among industries.

2020 goal: Implement effective load allocation approach.

2007 goal: Support the design of an effective approach.

Challenge:

Load allocations are needed in order to understand and predict pollution impacts on the watershed, and to provide checks and balances to assure that resources are spent on the greatest environmental needs.

Solution:

Support efforts to implement a scientifically based "load allocation approach" as a tool for informed, cost-effective management of toxics in the Elizabeth River.

Action steps:

1) Explore the potential for addressing this need by adapting a hydrodynamic model developed for the Elizabeth River by the Virginia Institute of Marine Science. While prepared for the purpose of predicting impacts of Craney Island expansion, this model appears to represent a significant baseline for load allocation development. Coordinate with existing efforts of multiple agencies.

Action 14

Improve Sewage

Support efforts to improve insufficient sanitary collection systems.

2020 goal: Support efforts to achieve sufficient sanitary sewer infrastructures for city systems and effective sewage disposal for boaters.

2007 goal: Support progress of municipalities in costly efforts to address aging, failing sewage infrastructures. Support programs and technology for boater sewage disposal.

Challenge:

The Elizabeth River's older urban cities are faced with aging, failing sewage infrastructures. Recreational boaters -- including thousands traversing the river on the Intercoastal Waterway -- also face sewage disposal challenges.

Solution:

Support efforts to improve insufficient sanitary collection systems, for the purpose of reducing human health and ecological risks from bacterial contamination in the Elizabeth.

Action steps:

1) Support municipality efforts. Cities, notably Norfolk, are taking up the expensive problem of aging, failing infrastructures.

2) Support Hampton Roads Sanitation District (HRSD) and other agencies' progress to reduce untreated sewage discharged from boats. HRSD has implemented a free pump-out service for Hampton Roads boaters, using grant funds. HRSD conducts extensive outreach on this issue.

3) Support the development of improved technology for marine sewage disposal.

4) Develop strategies to pursue Toxics 2000 Strategy, Chemical Release Reductions: "by 2005 . . . reduce by 15 percent chemicals of concern from 1998 levels by working with publicly and privately owned treatment works and industries."

5) Support and promote Virginia's *'Clean Marina'* Program.

Help Make Restoration a Reality

The time is now.

More than 2,000 people are dues-paying members of the Elizabeth River Project. Industrial facilities pursue voluntary environmental stewardship as River Stars. Residents implement backyard projects from our *Wildlife Habitat Guide*. Still others volunteer for our education programs, events and citizen monitoring efforts. Let us know how you would like to help make *Elizabeth River Conservation and Restoration* a reality.

Membership Opportunity

Progress depends on you. Join the non-profit Elizabeth River Project and help us achieve the vision of a restored and conserved home river!

Membership Benefits 2003:

Individual members - Subscription to Mudflats, decal and workshop discounts.

Organizational members - Above, plus new members receive a plaque.

❒ ***Sign me up*** for membership to help restore the Elizabeth River. Dues are tax-exempt.

❒ ***Send*** your *Wildlife Habitat Guide ($5 donation)*, a 142-page do-it-yourself tool for landscaping a backyard or business to help river ecology.

Individual Dues

- ❒ Basic $25 - $34
- ❒ Contributing $35 - $49
- ❒ Supporting $50 - $99
- ❒ Sustaining $100 - $499
- ❒ Major Donor $500 +

Organizational Dues

- ❒ Basic $175 - $499
- ❒ Supporting $500 - $999
- ❒ Sustaining $1,000 - $1,999
- ❒ Major Donor $2,000 +

❒ ***Contact me*** about _____ River Stars, _____ River Star Schools, _____ volunteering.

Name _____

Organization _____

Address _____

City _____ State _____ Zip _____

Phone _____ Fax _____ E-Mail _____

Make check payable to:

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Acknowledgements

Stakeholder Review Team

The Elizabeth River Project salutes the 120-member Watershed Action Team that completed the initial plan in 1996. A diverse group of stakeholders met again in 2001-02 to recommend updates and revisions. Special thanks to the following participants:

Elizabeth Waters, Facilitator
Diana Bailey, US Army Corps of Engineers
Michael Barbachem, URS Corporation
Cherryl Barnett, US Navy, Mid-Atlantic Region
Joanne Berkley, Baycare
Pamela Boatwright, Elizabeth River Project
Dr. George W. Brown, Elizabeth River Project Board
W. Keith Cannady, City of Norfolk
J. William Cofer, VA Pilot Association
Susan Cofer, Educator
Howard Copeland, Attorney at Law
Cheryl Copper, City of Hampton
Larry Crum, WHRO
Frank Daniel, VA Department of Environmental Quality
John Deuel, Norfolk Environmental Commission
Pam Dunning, Old Dominion University PhD student
Kelly Eisenmann Shenk, Chesapeake Bay Program
Princess Elizabeth, Elizabeth River Project
Dr. Carl W. Fisher, Elizabeth River Project Board
Ann Fitzgibbon, Eastern Virginia Medical School
Michael Fitzgibbon, Lafayette River Consulting
James Gildea, City of Portsmouth
Rev. Joseph Green, Jr., Elizabeth River Project Board
Sara I. Greer, Citizen
Mike Host, Norfolk Naval Shipyard
Lyle Jackson, Elizabeth River Project
Marjorie Mayfield Jackson, Elizabeth River Project
David McGuigan, US Environmental Protection Agency
Michael Nickelsburg, Tidewater Community College
Bert Parolari, Jr., VA Department of Environmental Quality
Marina Liacouras Phillips, Kaufman & Canoles
Kathy Powell, Elizabeth River Project
Rob Powell, Norfolk Boat Works
Robert Pretlow, US Army Corps of Engineers
Josh Priest, Elizabeth River Project Board
Walter I. Priest III, Elizabeth River Project Board
Mark Richards, VA Department of Environmental Quality
Dr. Morris H. Roberts, Jr., VA Institute of Marine Science
Dottie Seward, Elizabeth River Project Board
Dr. Jay Taylor, Hampton Roads Behavioral Health
Claude "Okie" Thompson, CAPT USCG (Ret.), Consultant
Hugo Valverde, Hampton Roads Planning District Commission
Van White, Nova Chemicals (USA), Inc.

Special thanks to artists from the Living River exhibit 2002 for permission to illustrate this plan with their work.

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The Elizabeth River Project salutes our members for making possible implementation progress!

We envision an Elizabeth River that:

- Nourishes and sustains a wide variety of economic and public uses,
- Supports a healthy and diverse ecosystem, and is
- Actively and responsibly managed by an educated citizenry and a partnership of river users.

- Watershed Action Team, Elizabeth River Project, June 12, 1995

THE Elizabeth River Project

www.elizabethriver.org